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## The amount of physical activity in Finnish day care

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### Abstract

The purpose of this study has been to examine the amount of physical activity of children in Finnish day care. An observation with systematic sampling was conducted in 62 day care centers and with childminders. Children were highly active physically (with at least some physical exertion) in average 24 minutes between 8:00-12:00 hours. The physical activity was the lowest among children with the most problems with motoric development. The physical activities children need are dependent on children's personal choices and their design of activities during free play outdoors.

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**Keywords:** early childhood; physical activity; teaching; free play; outdoors

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### 1. Introduction

Physical activity comprises any bodily movement produced by the skeletal muscles that results in a substantial increase in energy expenditure over resting levels (Bouchard, Blair & Haskell, 2007). Physical activity is an important part of healthy lifestyle. A physically active lifestyle has been found to be a conclusive factor for health benefits among people of all ages. (Ross & Janssen, 2007.)

Physically active lifestyle in early childhood forms the basis for the development of perceptual and fundamental skills, as well as for the promotion of health in adulthood (Sääkslahti, 2005). According to

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the Finnish national recommendations for physical activity “A child needs at least two hours of brisk physical activity every day” (Handbook of the Ministry of Social Affairs and Health, 2005).

Young children learn through concrete physical activity by playing. Children are healthy and happy when they are playing. While playing they learn through play and display their inner selves: who they are, what they know and how they feel. (Butcher & Eaton, 1989.) In early childhood playing has also an important physical component. Byers (1998) suggests that the function of play is to support the development of the brain centers that are involved in the tuning of motor output. The connection with play and motor development can also be seen as a significant factor in the development of perceptual-motor skills (Gabbard, 1998).

Children need perceptual-motor skills to be able to identify their body and extremities, as well as to move successfully in relation to space and time. That is why physically active play seems to be an extremely important means to facilitate overall development in childhood. (Gabbard, 1998.) Children need fundamental motor skills as well as perceptual-motor skills to cope with their everyday life. These motor skills such as walking or running in different places are also learned through physical activity. (Carson, 2001.)

Motor skills can be classified into three basic categories based on their character and quality: 1) Balance skills provide the maintenance of balance both in static and dynamic positions; 2) Locomotor skills are essential in moving from one place to another; 3) Manipulative body skills allow children to handle various objects and equipment using different body parts. By making use of these skills, children explore their physical environment and develop their cognitive abilities. The fundamental motor skills – walking, running, jumping, throwing, catching, kicking and striking – are based on these three categories. (Gallahue & Donnelly, 2003.)

Children’s physical activities have direct impact on children’s capacity to learn. That is why physical activities have long-lasting effects on lifelong behavior. (Butcher & Eaton, 1989.) The amount and quality of physical activity during the lifetime is markedly influenced by cultural context. Social environment can support the innate desire of children to be physically active by providing a physical environment that offers them opportunities to practice different motor activities and improve their skills. For example, children tend to exhibit more physically active behavior outdoors than indoors. Playing outdoors allows children to use their entire musculature and their strength-related abilities, which are the precursors to increasing running velocity and jumping distance. (Pellegrini & Smith, 1998.)

The early years of childhood might be particularly important in the development of an enduring physically active lifestyle (Raitakari, Taimela & Porkka, 1997). This is a challenge because in our consumer-orientated society sports is only one of many choices of free time activity children can make nowadays. Some studies indicate that the physical activity of young age has decreased (Sääkslahti, 2005).

Nowadays, children are often only able to train and develop their gross motor skills in their home environment, as daycare centers seldom provide adequate spaces for such activities. On the other hand, the amount of time spent in sedentary activities (watching television, playing computer games, etc.) during leisure time has increased significantly. (Du Rant, Thompson, Johnson & Baranowski, 1996.)

## 2. Research problems and methods

The research problems in the study were:

- How active children are in day care in general?
- How physically active children are in teaching sessions and outdoor activities?

### 2.1. Observation

A systematic sampling was conducted in 62 day care centers and with childminders in Finland. From 8:00 AM to 12:00 AM children's physical and other activities were observed 19606 times. The scale of physical activity was 1) Low (sitting, using pen, eating etc.); 2) Intermediate (walking, whole body movements) and 3) High (includes at least some running, romping or physical exertion).

### 2.2. The evaluation of children's skills

The educators of the group evaluated children's skills in a Likert scale from 1 (does not describe the child) to 5 (describes the child well). One of the evaluated items was children's gross motor skills. In the analysis stage the observation data was merged with children's skills. Thus it was possible to study the relations between children's physical activity and gross-motor skills.

## 3. Results

Children's physical activity was observed during all activities in day care. In the observation period from January 2010 to May 2010 the most frequent activity was free play indoors (23%). The second most frequent activities were eating activities, which consisted of 20% of the activities. The percentage of direct education inside was 19 and the percentage of free play outdoors was 18. The percentage of basic care activities was 14. Scaffolded play outdoors was observed 3.1% of the time and indoors 2.0% of the time. Children's general physical activity can be seen Figure 1.

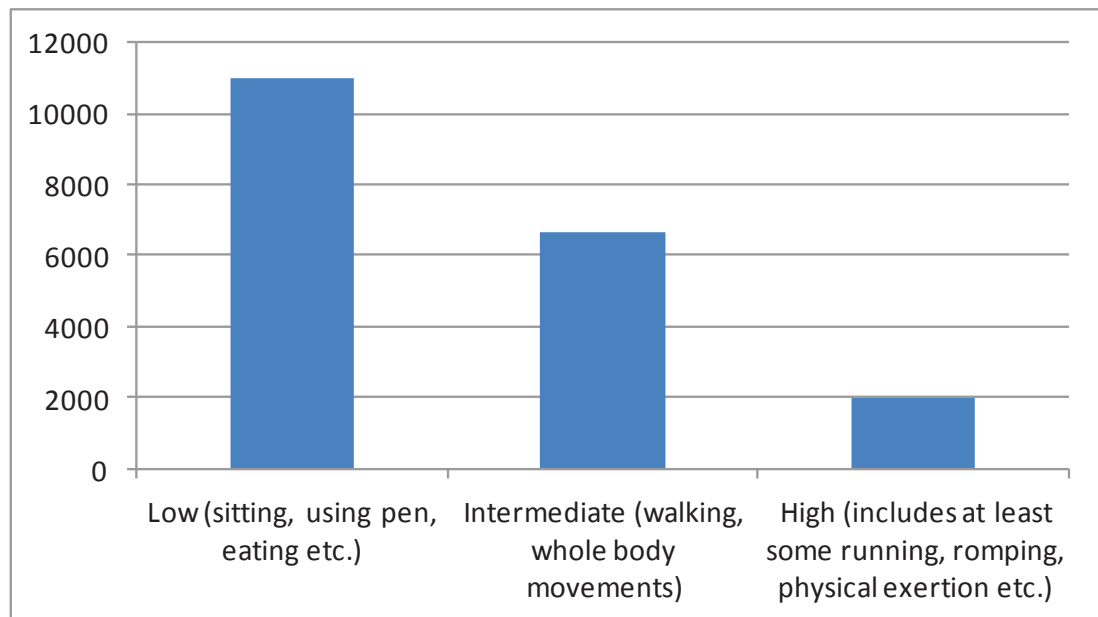


Fig. 1. The amount of observations at different levels of physical activity in Finnish day care centers between 8:00-12:00 hours

Children were highly active physically (with at least some physical exertion) 24 minutes (10% of the time) between 8:00-12:00 hours. The morning time is the most active time in Finnish day care centers. In the afternoon children usually have a rest, a snack and play freely indoors before going outdoors until their parents come to pick the children home. The physical activity in different day care activities can be seen in Figure 2.

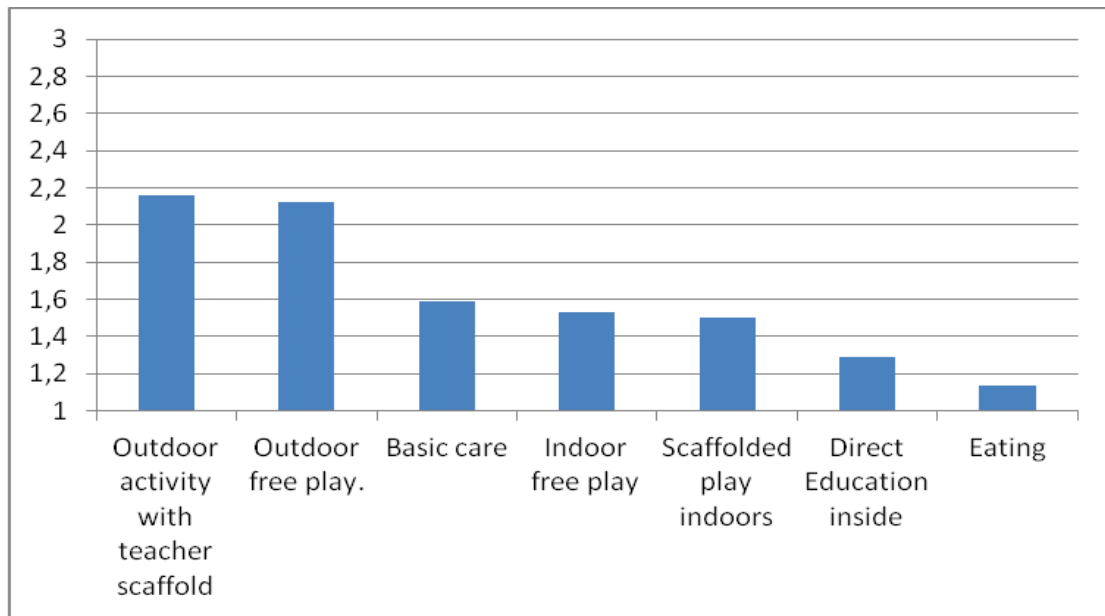


Fig. 2. Children's physical activity in different day care activities in Finnish day care centers between 8:00-12:00 hours

Outdoors children's physical activity was high both in activities with teacher scaffold and in children's free play. Outdoor activities with teacher scaffold included physical exertion 33% of the time and whole body movements 50% of the time. In free play outdoors children's activities included physical exertion 32% of the time and whole body movements 49% of the time.

During direct education and teaching sessions indoors children's physical activity was low. During direct education children's activities included physical exertion only 6.6% of the time and whole body movements 16% of the time. The direct education sessions included also physical education sessions. On the whole, children's physical activity was heavily dependent on the amount of activities done outdoors.

The teachers were asked to evaluate the statement *Needs a lot of support in gross motor development* for each child in a likert scale (1 = does not describe the child at all, 5 = describes the child very well). In Figure 3 is presented the mean differences of the children with none or very little gross motor problems and children with at least some gross motor problems.

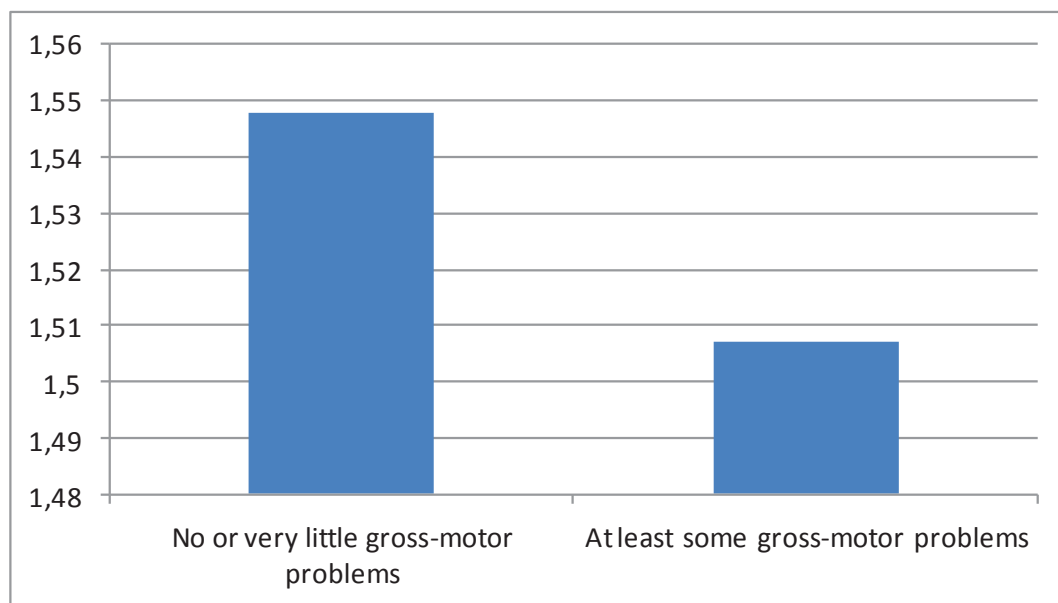


Fig. 3. The means of children's physical activity in groups of children with no and with at least some gross motor problems

The children with at least some gross-motor problems were less physically active ( $M = 1.507$ ,  $SD = .646$ ) than children with none or very little gross-motor problems ( $M = 1.548$ ,  $SD = .677$ ). The difference was statistically very significant,  $t = 3.64$ ,  $df = 7850.21$ ,  $p < .001$ , 95% CI (.018, .062). This result indicates that children who need physical exercise the most get it the least. Because the most important part of children's physical activity depends on their own initiation in free play outdoors, the children with gross motor problems need special encouragement from the educators.

#### 4. Discussion

Children's physical activity was critically lower during activities arranged by the teachers. Thus, the physical activities children need are dependent on children's personal choices and their design of activities during free play outdoors. It is worrying that children who need physical exercise the most get it the least.

Children's physical activity was the highest during teacher scaffold outdoors, but because the activity consisted of only 3.1% of the activities, it is not an important factor in children's physical activity. However, the outdoor activities scaffolded by the educators are valuable and they should be increased.

The results indicate that children are physically active if they are allowed to play freely in an open space with less restrictions and rules for high physical activity. Children's innate tendency to be physically active should be acknowledged and nurtured.

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